

CONSUMER AND COMMERCIAL PRODUCTS: WOOD FURNITURE,
AEROSPACE, AND SHIPBUILDING AND SHIP REPAIR COATINGS:
CONTROL TECHNIQUES GUIDELINES IN LIEU OF REGULATIONS

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of proposed determination.

SUMMARY: The EPA is proposing its determination that control techniques guidelines (CTG) are substantially as effective as national regulations under section 183(e) of the Clean Air Act (CAA), as amended in 1990, in reducing volatile organic compounds (VOC) emissions in ozone nonattainment areas from wood furniture manufacturing, aerospace, and shipbuilding and ship repair coatings and that, therefore, the EPA may issue a CTG in lieu of a national regulation for each of these specific categories. The CAA requires the EPA to control VOC emissions from certain categories of consumer and commercial products through either issuance of national rules or CTG. The proposed action implements this requirement by determining that CTG are substantially as effective as regulations for wood furniture manufacturing, aerospace, and shipbuilding and ship repair coatings and, therefore, may be issued in lieu of regulations.

The EPA determined that VOC emissions from consumer and commercial products can contribute to the formation of ozone and ozone levels that violate the national ambient air

quality standards (NAAQS) for ozone. Ozone, which is a major component of smog, causes negative health and environmental impacts when present in high concentrations at ground level. As of April 1996, there were 73 geographic areas which exceeded the NAAQS for ozone. These ozone nonattainment areas have a combined population of 114 million people.

A public hearing will be held, if requested, to provide interested persons an opportunity for oral presentation of data, views, or arguments concerning the EPA's determination that CTG may be issued in lieu of national regulations for wood furniture, aerospace, and shipbuilding and ship repair coatings.

DATES:

Comments. Comments must be received on or before [INSERT DATE 60 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER].

Public Hearing. A public hearing will be held, if requested, to provide interested persons an opportunity for oral presentation of data, views, or arguments concerning the proposed determination that CTG are substantially as effective as national regulations for wood furniture, aerospace, and shipbuilding and ship repair coatings and, therefore, CTG may be issued in lieu of regulations. If anyone contacts the EPA requesting to speak at a public

hearing by [CONTACT MS. KIM TEAL (919) 541-5580 FOR INSERT DATE], a public hearing will be held on [PLEASE CONTACT MS. KIM TEAL (919) 541-5580 FOR INSERT DATE], beginning at 9:30 a.m. Persons interested in attending the hearing should contact Ms. Kim Teal at (919) 541-5580 to verify whether a hearing will occur and the location of the hearing.

Request to Speak at Hearing. Persons wishing to present oral testimony must contact the EPA by [PLEASE CONTACT MS. KIM TEAL (919) 541-5580 FOR INSERT DATE], by contacting Ms. Kim Teal, Coatings and Consumer Products Group (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number (919) 541-5580.

ADDRESSES:

Comments. Comments should be submitted (in duplicate, if possible) to: Air and Radiation Docket and Information Center (6102), Attention: Docket No. A-96-23, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460.

Docket. Docket No. A-96-23, containing supporting information for the proposed determination of the effectiveness of a CTG for the wood furniture, aerospace, and shipbuilding and ship repair coatings under section 183(e), is available for public inspection and

copying between 8:30 a.m. and 5:00 p.m., Monday through Friday, at the EPA's Air and Radiation Docket and Information Center, Waterside Mall, Room M-1500, 1st Floor, 401 M Street, SW, Washington, DC 20460. Telephone (202) 260-7548, FAX (202) 260-4400. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: Mr. Daniel Brown, (919) 541-5305, Coatings and Consumer Products Group, Emission Standards Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

SUPPLEMENTARY INFORMATION:

Electronic Access and Filing Addresses. Comments and data may also be submitted electronically by sending electronic mail (e-mail) to: a-and-r-docket@epamail.epa.gov. Electronic comments must be submitted as an ASCII file avoiding the use of special characters and any form of encryption. Comments and data will also be accepted on disk in WordPerfect 6.1 file format or ASCII file format. All comments and data in electronic form must be identified by the docket number A-96-23. No Confidential Business Information should be submitted through e-mail. Electronic comments on this proposed determination may be filed online at many Federal Depository Libraries.

An electronic version of this proposed determination is available for download from the EPA's Technology Transfer Network (TTN), a network of electronic bulletin boards developed and operated by the Office of Air Quality Planning and Standards. The TTN provides information and technology exchange in various areas of air pollution control. The service is free, except for the cost of a phone call. Dial (919) 541-5742 for data transfer of up to 14,400 bits per second. If more information on TTN is needed, contact the systems operator at (919) 541-5384.

Potentially Affected Entities. Entities potentially affected by this action are those wood furniture manufacturing operations, aerospace manufacturing and rework operations, or shipbuilding and ship repair (surface coating) operations which are (or have the potential to become) "major" sources of VOC emissions and are located in nonattainment areas of ozone. Potentially affected entities are included in the following table:

Category	Examples of potentially affected entities
Industry	<p>Wood furniture or wood furniture component(s) manufacturing.</p> <p>Any manufacturing, reworking, or repairing of aircraft such as airplanes, helicopters, missiles, rockets, and space vehicles.</p> <p>Any building or repairing, repainting, converting, or alteration of ships. The term ship means any marine or fresh-water vessel, including self-propelled by other craft (barges), and navigational aids (buoys). Note: Offshore oil and gas drilling platforms and vessels used by individuals for noncommercial, nonmilitary, and recreational purposes that are less than 20 meters in length are not considered ships.</p>
Federal Government	<p>Federal agencies which undertake aerospace manufacturing or rework operations (see above) such as the Air Force, Navy, Army, and Coast Guard.</p> <p>Federal agencies which undertake shipbuilding or ship repair operations (see above) such as the Navy and Coast Guard.</p>

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities which are the focus of this action. This table lists the types of entities that the EPA is now aware could potentially be affected by this action. Other types of entities not listed in the table could also be affected. If you have questions regarding the focus or applicability of this action to a

particular entity, consult the person listed in the preceding "FOR FURTHER INFORMATION CONTACT" section of this notice.

The information presented in this notice is organized as follows:

I. Background

II. Wood Furniture Manufacturing Coatings

A. Factors to Consider Regarding the Effectiveness of CTG Compared to a National Regulation

B. Overview of Existing Wood Furniture CTG and Expected Emissions Reductions

C. Estimate of BAC for Wood Furniture Coatings

D. Comparison of Effectiveness of Wood Furniture CTG with National Regulation Based on BAC in Reducing VOC Emissions

III. Aerospace Coatings

A. Factors to Consider Regarding the Effectiveness of CTG Compared to a National Regulation

B. Overview of Recently Proposed Aerospace CTG and Expected Emissions Reductions

C. Estimate of BAC for Aerospace Coatings

D. Comparison of Effectiveness of Aerospace CTG with National Regulation Based on BAC in Reducing VOC Emissions

IV. Shipbuilding and Ship Repair Coatings

A. Factors to Consider Regarding the Effectiveness of CTG Compared to a National Regulation

B. Overview of Shipbuilding and Ship Repair CTG and Expected Emissions Reductions

C. Estimate of BAC for Shipbuilding and Ship Repair Coatings

D. Comparison of Effectiveness of Shipbuilding and Ship Repair CTG with National Regulation Based on BAC in Reducing VOC Emissions

V. Proposed Determination

VI. Cost-Effectiveness

VII. Solicitation of Comments

VIII. Administrative Requirements

A. Public Hearing

B. Docket

C. Paperwork Reduction Act

D. Administrative Designation and Regulatory Analysis

E. Regulatory Flexibility

F. Unfunded Mandates Act

I. Background

Exposure to ground-level ozone is associated with a wide variety of human health effects, agricultural crop loss, and damage to forests and ecosystems. The most thoroughly studied health effects of exposure to ozone at elevated levels during periods of moderate to strenuous exercise are the impairment of normal functioning of the lungs, symptomatic effects, and reduction in the ability to engage in activities that require various levels of physical exertion. Typical symptoms associated with acute (one to three hour) exposure to ozone at levels of 0.12 parts per million (ppm) or higher under heavy exercise or 0.16 ppm or higher under moderate exercise include cough, chest pain, nausea, shortness of breath, and throat irritation.

Ground-level ozone, which is a major component of "smog," is formed in the atmosphere by reactions of VOC and oxides of nitrogen (NO_x) in the presence of sunlight. In order to reduce ground-level ozone concentrations, emissions of VOC and NO_x must be reduced.

Section 183(e) of the CAA addresses the reduction of VOC emissions from consumer and commercial products. It requires the EPA to study VOC emissions from consumer and commercial products, to report to Congress the results of

the study, and to list for regulation products accounting for at least 80 percent of VOC emissions resulting from use of such products in ozone nonattainment areas. Accordingly, on March 23, 1995 (60 FR 15264), the EPA announced the availability of the "Consumer and Commercial Products Report to Congress" (EPA-453/R-94-066-A), and published the consumer and commercial products category list and schedule for regulation. As stated in that notice, the list and schedule could be amended as further information becomes available. Group I, which identifies product categories scheduled for regulation by 1997, includes wood furniture, aerospace, and shipbuilding and ship repair coatings. Therefore, the EPA is required to regulate these three categories by 1997. In this action, the EPA seeks comment on the listing and the schedule for regulation with respect to these three categories.

Regulations developed under section 183(e) must be based on best available controls (BAC). Section 183(e)(1)(A) defines BAC as follows:

The degree of emission reduction that the Administrator determines, on the basis of technological and economic feasibility, health, environmental, and energy impacts, is achievable through the application of the most effective equipment, measures, processes, methods, systems, or techniques, including chemical reformulation, product or feedstock substitution, repackaging, and directions for use, consumption, storage, or disposal.

Although section 183(e) requires the EPA to issue regulations, section 183(e)(3)(C) provides that the EPA may issue CTG in lieu of a national regulation where the EPA determines that the CTG will be "substantially as effective as regulations" in reducing emissions of VOC in ozone nonattainment areas.

Although not specifically defined in the CAA, a CTG is a guidance document issued by the EPA which, under section 182(b)(2), triggers a responsibility for States to submit reasonably available control technology (RACT) rules for stationary sources of VOC that are covered by the CTG as part of their State implementation plans. The EPA defines RACT as "the lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility" (44 FR 53761, September 17, 1979). Each CTG includes a "presumptive norm" or "presumptive RACT" that the EPA believes satisfies the definition of RACT. If a State submits a RACT rule that is consistent with the presumptive RACT, the State does not need to submit additional support to demonstrate that the rule meets the CAA's RACT requirement. However, if the State determines to submit an alternative emission limit or level of control for a source or source category for which there is a presumptive RACT, the State must submit

independent documentation as to why the rule meets the statutory RACT requirement.

Although section 183(e) authorizes issuance of a CTG in lieu of a regulation for categories of consumer and commercial products for which a CTG would be substantially as effective in ozone nonattainment areas as a regulation would be, the statute does not explicitly identify the appropriate standard, or level of control, for the CTG. As discussed above, a CTG generally triggers the responsibility of a State to develop regulations based on RACT. Congress did not provide a distinct standard to be considered when determining whether a CTG would be substantially as effective as a regulation pursuant to section 183(e), and legislative history does not address this issue. Because the only statutory requirement triggered by a CTG is establishment of RACT, the EPA believes that Congress intended the more generally applied RACT standard to be the basis for determining whether a CTG could be issued in lieu of regulation for consumer and commercial products.

In some situations, the EPA may examine an existing CTG, or one that is under development pursuant to other requirements of the CAA, to determine if such CTG is substantially as effective as a regulation under section 183(e). The EPA believes that such comparisons would fulfill the requirements of section 183(e) when such

CTG are based on RACT or standards determined to be equivalent to RACT.

Sections 183(b)(3) and (4) require the EPA to establish CTG based on "best available control measures" (BACM) to reduce emissions from aerospace coatings and solvents and shipbuilding and ship repair coating operations. As discussed later in this notice, the EPA determined that for the CTG based on BACM required under sections 183(b)(3) and (4) for aerospace coatings and shipbuilding and ship repair coating operations, RACT would in fact be equivalent to BACM. Therefore, it is appropriate for the EPA to consider whether these CTG, which would meet both BACM and RACT, would be substantially as effective as a BAC-based regulation issued under section 183(e).

In exercising its discretion to consider a CTG as a regulatory alternative under section 183(e) of the CAA, the EPA recognizes that because its specific purpose is to reduce emissions of VOC in ozone nonattainment areas, in some cases a CTG can be substantially as effective as a national regulation, particularly for some of the commercial products scheduled for regulation under section 183(e). In fact, in some instances, a CTG may be more effective because it can be directed at a broader scope of regulated entities. Section 183(e) defines regulated entities as follows:

(i) ...manufacturers, processors, wholesale distributors, or importers of consumer or commercial products for sale or distribution in interstate commerce in the United States; or (ii) manufacturers, processors, wholesale distributors, or importers that supply the entities listed under clause (i) with such products for sale or distribution in interstate commerce in the United States.

Based on this definition, a regulation issued under section 183(e) for consumer or commercial products would focus only on the manufacturers or importers of the solvents and products supplied to the consumer or industry, rather than on the consumer or end-users of the products within an industry. Focusing on manufacturers and importers is an effective approach for reducing emissions from consumer and commercial products, especially those which are easily transportable and widely distributed to consumers and contractors for use in unlimited locations. For these types of products, a CTG may not be as effective as a national regulation. The transportability of the products tend to decrease rule effectiveness due to the likelihood of unregulated or "higher VOC" products being bought in attainment areas and used in nonattainment areas. In addition, since the end-users include homeowners and other widely varied consumers, effective enforcement on these types of users would be limited. Therefore, for these types of products, the main benefit of a CTG may not be achieved; namely, the ability to ensure that the product used meets

the requirements after any thinner or other VOC components are added. In such instances where the end user is at a specified manufacturing setting, a CTG may be as, or more, effective than a regulation because a CTG can be reasonably focused on the end-user, and thus, directly target the coating as-applied, rather than as-supplied, at the facilities. The "as-applied" coating would include the VOC in the manufactured commercial coating itself plus any VOC solvent added to the product by the end-user. The application of a CTG to these industries may be particularly effective because, in contrast to consumer products, these industries have well-defined end-users which consistently apply large volumes of coatings at specific and easily identifiable locations. At the point of application, a CTG can prohibit an end-user from thinning products beyond VOC requirements. In addition, a CTG could achieve added VOC reductions in industrial settings where these coatings are applied by requiring particular application equipment or work practices. These types of requirements would not be practical for widely distributed consumer products since enforcement personnel would not be aware of locations where the products may be used on any given day.

In the case of wood furniture manufacturing, aerospace, and shipbuilding and ship repair facilities,

large volumes of coatings may be applied in a manner where the specific application process requires the addition of VOC solvent and other adjuncts to achieve and maintain ideal coating properties; these additions by the end-user may increase emissions of VOC which may not be adequately addressed by a regulation aimed at regulated entities (i.e., the coating manufacturers). Because a CTG is directed towards the end-user, requirements could directly target the coating as applied at the facility. The "as-applied" coating would include any VOC solvent added to the commercial products (i.e., the coatings as supplied by the coating manufacturers) by the end-user. In addition, a CTG could target application equipment and work practice standards to achieve further VOC reductions. In these cases, a CTG may be a more effective means to reduce VOC emissions than a national regulation.

Considering these factors, the EPA estimated and compared the likely VOC reductions in ozone nonattainment areas to be achieved by a CTG versus a national regulation based on BAC for each of these categories. In conducting the comparison of whether a CTG based on RACT would be substantially as effective as a national regulation based on BAC, the EPA estimated what RACT and BAC would be in order to estimate emission reductions. Although the EPA considered likely estimates of RACT and BAC for this

comparative purpose, at this time, specific RACT and BAC limits are not being proposed and the EPA only seeks comments on the proposed case-by-case determination that a CTG would be as effective as a national regulation for these three industries. If the EPA determines, based on comments received, that a CTG would not be substantially as effective as a national regulation, the EPA will proceed with development of a BAC-based national regulation. As today's proposal relies only on estimates of BAC, it is possible that a BAC-based regulation may differ from the estimates relied on today.

Based on the comparisons discussed below, the EPA is proposing that a CTG for wood furniture, aerospace, and shipbuilding and ship repair industries would be substantially as effective as a national regulation developed under section 183(e) in reducing VOC emissions from facilities located in ozone nonattainment areas. In determining whether to develop a CTG or a regulation, the EPA may take into account a variety of different factors related to implementation and enforcement, such as the most effective entity to target for regulation, the need for flexibility, the distribution and site of use for the products, consistency with other control strategies, and cost-effectiveness. As described below on a case-by-case basis, some of these factors can affect the effectiveness of

a CTG in controlling VOC emissions from commercial products. The EPA requests comment on these determinations.

II. Wood Furniture Manufacturing Coatings

A. Factors to Consider Regarding the Effectiveness of CTG Compared to a National Regulation

In evaluating control strategies for VOC emissions from wood furniture manufacturing coatings, it is necessary to know how those coatings are used by the wood furniture industry. The wood furniture industry is commonly grouped into household/residential furniture, office/business furniture, and kitchen cabinet furniture. Each group consists of different grades and styles of wood furniture products and uses a variety of raw materials and manufacturing methods. Differences in the products would be apparent in finish application methods, finishing sequences, types of wood or wood product used, and types of finish coatings used.

The coatings used in the wood furniture industry penetrate the wood and become an integral part of the final product. The coatings are very complex in that they react differently with the various types of wood, fiberboard, and particleboard used by the industry, as well as each subsequent coating applied in the finishing process. Therefore, each type of coating used for a particular step in a finishing sequence is unique and must be formulated as

part of a complimentary finishing system to ensure compatibility. In addition, the VOC content and composition of a coating is sometimes adjusted to account for changes in the drying time and the overall ease of application in relation to ambient temperature and the humidity. Solvents used to adjust the coatings are also used for cleaning application equipment and work spaces and to strip finished pieces (referred to as washoff) that do not meet specifications.

The related VOC emissions from the wood furniture industry, therefore, are from the use of the coatings and the use of solvent in cleaning and washoff operations. Because VOC emissions in this industry are due to a variety of different sources in the manufacturing process, including the coatings as applied, a national regulation under section 183(e) of the CAA may be of limited effectiveness in reducing VOC emissions from wood furniture coatings. This is primarily due to the fact that the EPA's authority under section 183(e), as previously discussed, does not authorize the regulation of end-users. Thus, regulations could apply only to the wood furniture coatings as "supplied" to the wood furniture industry, not to the users who apply the coatings. Since the wood furniture manufacturers often alter a supplied coating prior to its application by adding VOC solvents, the "as-applied" VOC content of the coating

ends up being greater than the "as-supplied" VOC content. For this reason, a CTG could be as effective, if not more effective, than a national regulation. For the wood furniture industry, consisting of facilities which could be inspected for compliance with State RACT rules, a CTG could provide limits for the coatings as applied and also achieve VOC emission reductions from the implementation of work practice standards for the associated cleaning and washoff operations.

B. Overview of Existing Wood Furniture CTG and Expected Emissions Reductions

Under a separate Federal Register notice, the EPA recently released a final CTG for the wood furniture manufacturing industry (61 FR 25223, May 20, 1996) pursuant to section 183(a) of the CAA. The EPA is not seeking comment on the content, or issuance, of that wood furniture CTG as it was issued independently of any requirements of section 183(e). However, for the purpose of determining whether a CTG would be substantially as effective as a regulation as required under section 183(e), the following discussion refers to that CTG as an estimate of the potential emission reductions obtainable with a CTG for the wood furniture industry. As the CTG issued pursuant to section 183(a) was based on RACT, and a CTG to be issued pursuant to section 183(e) would also be based on RACT, the

already existing CTG provides an appropriate estimate for these purposes.

The wood furniture CTG applies to wood furniture manufacturing facilities located in ozone nonattainment areas that emit more than 25 tons per year (tpy) of VOC (10 tpy for sources located in extreme ozone nonattainment areas). The CTG includes emission limits for the finish coatings used by the wood furniture industry and work practice standards that will reduce emissions from finishing, cleaning, and washoff operations by reducing finish coating and solvent usage.

The CTG emission limits were established through a regulatory negotiation process consisting of stakeholders from industry, environmental and public health groups, States, and the EPA. For over two years the stakeholders evaluated several control technique options in consideration of advancing technology, compatibility, and feasibility. At the conclusion of the evaluation, it was determined that of the various coatings used in the finishing process, conventional topcoats and sealers could technically and feasibly be replaced with waterborne and/or high solids coatings. The waterborne technology, however, is limited to topcoats since waterborne sealer technology has been slower to advance and is limited in availability to a few segments of the industry where both waterborne sealers and topcoats

can be used to meet product quality requirements. The high solids technology is further advanced and both high-solids topcoats and sealers are, or will be, available to the industry.

The emission limits corresponding to these two reference control technologies are presented in table 1. A wood furniture manufacturing facility may reformulate all of its topcoats so that it meets the waterborne reference technology limit of 0.8 kilogram (kg) VOC/kg solids, in which case it could use any sealer with no restriction on its VOC content; or it may reformulate both the sealers and topcoats to meet the high solids reference technology limits of 1.9 and 1.8 kg VOC/kg solids, respectively (2.3 and 2.0 for vinyl sealers and conversion varnish topcoats). The 0.8 kg VOC/kg solids limit for the waterborne topcoats may also be achieved with other types of topcoats such as ultraviolet-cured topcoats which also meet this limit.

Facilities must also comply with the work practice standards. These include a limit on the types of application equipment that may be used to apply finishing materials and a requirement that facilities develop and implement an operator training program, a cleaning and washoff solvent accounting system, and a leak detection and repair program. Facilities must also keep all containers used to store finishing materials and solvents closed when

not in use. Table 2 summarizes the work practice standards included in the CTG.

In the previously issued CTG, the EPA estimated that more than 950 wood furniture manufacturing facilities will be subject to State regulations based on the CTG. The emission limits and work practice standards are expected to reduce VOC emissions from these facilities by 18,500 megagrams per year (Mg/yr) (20,400 tpy) in ozone nonattainment areas.

C. Estimate of BAC for Wood Furniture Coatings

As discussed in the background section of this notice, the EPA may determine that a CTG would be substantially as effective as a regulation issued under section 183(e). To make such a determination, the EPA estimated and compared the likely VOC reductions in nonattainment areas to be achieved by a CTG versus a regulation. Regulations issued pursuant to section 183(e) must be based on BAC. Thus, for comparative purposes, the EPA identified potential limits which would be likely to represent BAC. Although the EPA conducted such an analysis, the EPA is not proposing this estimate as a BAC limit at this time. The BAC estimate discussed in this proposal represents a likely limit that could represent BAC in a national regulation. However, if

the EPA were to proceed with the development of a national BAC regulation, it is possible that the BAC-based regulation may differ from the estimates relied on today for comparison purposes.

In estimating BAC for wood furniture coatings, the EPA evaluated the information and data used to establish the VOC emission controls in the wood furniture CTG. As previously discussed, the limits recommended in the CTG resulted from over two years of evaluating control options in consideration of advancing technology and feasibility. Although that CTG was based on RACT, as discussed below, the EPA believes that the standard in the CTG reflects the most advanced control technologies available for use by the industry and is, thus, representative of BAC.

In evaluating the topcoat and sealer coatings used by the wood furniture manufacturing industry, the EPA considered conventional coatings with lower VOC content as well as the more advanced waterborne coatings and high solids coatings during the CTG development process. For the purpose of the following discussion, it is helpful to think of the different coating types (e.g., conventional, waterborne, high solids) as distinct technologies comprising separate coating systems. To maintain the diversity of wood furniture products and the various levels of product quality that customers demand, the EPA believes a variety of coating

systems should remain available. Therefore, in establishing the RACT limits in the CTG, the EPA included separate limits for waterborne and high solids coating technologies. However, rather than estimating limits for each coating technology in establishing BAC, the EPA estimated a single set of coating limits representing the lowest achievable VOC content which would not preclude the manufacture of the required coatings for each technology. Again, this is because a regulation under section 183(e) would not apply to the end-user of the product (e.g., the wood furniture manufacturing industry), but rather the manufacturer or importer of the product (e.g., the manufacturer of the wood furniture coating).

In evaluating BAC, waterborne technology and UV-curable coatings offered topcoats and sealers with the lowest VOC contents among all of the coating technologies considered. However, as described previously, only waterborne topcoats were determined to be RACT with the limit in the CTG set at 0.8 kg VOC/kg solid. In estimating BAC, the EPA considered strengthening the RACT limit for waterborne technology by establishing a VOC limit for waterborne sealers (which the CTG did not include) and lowering the RACT VOC limit for topcoats. However, if the EPA established BAC limits for topcoats and sealers based on waterborne technology with the lowest VOC content, it would

effectively eliminate the availability of other coating technologies (e.g., high solids coatings). Although a limit representing BAC would not necessarily need to allow the manufacture and availability of other coating technologies, some segments of the industry maintain that without these coating technologies they cannot provide the product quality in demand. For purposes of this analysis, the EPA believes that establishing a BAC limit based on waterborne technology may have adverse economic impacts on these industry segments, particularly those which have already invested time and resources in converting their facilities to use the high solids coating technology. Since this option may present technological limits and potentially significant economic impacts, for the purpose of this analysis, the EPA believes that BAC would not be based on the use of waterborne coatings.

The EPA further evaluated potential BAC limits in consideration of high solids coating technology. High solids coating technology is widely available throughout most segments of the wood furniture industry and both high solids topcoats and sealers were determined to be RACT with a VOC limit of 1.8 kg VOC/kg solids and 1.9 kg VOC/kg solids respectively. For high solids conversion varnish topcoats and vinyl sealers, the RACT limits are 2.0 and 2.3 kg VOC/kg solids respectively. In estimating BAC, the EPA considered

lowering the CTG RACT limits for high solids technology coatings by adopting lower VOC limits adopted in a similar State/local agency rule. However, in evaluating these local VOC limits, it was discovered that the sources being regulated typically did not include the diversity of facilities and operating conditions that must be considered in establishing national limits. Furthermore, since the adopted limits in the local rule have not gone into effect, compliance with the limits has not been demonstrated.

The EPA, therefore, believes that the limits established as RACT are representative of BAC with the possible exception of conversion varnish topcoats. For high solids conversion varnish topcoats, the EPA believes the BAC limit could be 1.8 kg VOC/kg solids as compared to the RACT limit of 2.0 kg VOC/kg solids.

The EPA believes that setting a BAC limit for topcoats equal to 1.8 kg VOC/kg solids is technically feasible. Although this limit would effectively eliminate conventional topcoats, both the waterborne and high solids coatings could be manufactured to meet this limit and would allow the wood furniture manufacturing industry to produce the diversity and quality of products demanded. In establishing a BAC limit for sealers, the EPA believes that the high solids technology would not be used as a basis. Setting the BAC limit for sealers at 1.9 kg VOC/kg solids would effectively

require facilities which converted to waterborne topcoats to use high solid sealers since waterborne sealers are not available for all applications. This may pose a problem for the industry because the waterborne and high solids technologies are not necessarily compatible and many segments of the industry may not be able to meet their product quality requirements with a combination of waterborne topcoats and high solids sealers. The industry maintains that when using waterborne topcoats, it is necessary in some applications to use conventional sealers to maintain product quality. Therefore, to estimate a BAC limit for sealers, the EPA relied upon an analysis of conventional sealers. Based on this analysis, the EPA determined that a reasonable estimate of BAC for sealers is 3.9 kg VOC/kg solids.

In summary, for purposes of this analysis, the EPA believes that the following limits would be likely to represent BAC for wood furniture coatings:

Sealers - 3.9 kg VOC/kg solids; and

Topcoats - 1.8 kg VOC/kg solids.

The EPA requests comments on the determination that these limits are representative of BAC. At this point, the EPA is not proposing these limits as BAC for a national regulation; rather, the EPA is using these estimated limits to compare the effectiveness of a wood furniture CTG to a national

regulation aimed at reducing VOC emissions in nonattainment areas for the purpose of determining whether a CTG for this category is substantially as effective as a national regulation.

D. Comparison of Effectiveness of Wood Furniture CTG with National Regulation Based on BAC in Reducing VOC Emissions

Based on EPA estimates of likely BAC limits incorporated into a national regulation compared to the CTG, the EPA believes that a CTG for wood furniture manufacturing coatings would achieve greater VOC emission reductions in ozone nonattainment areas than a regulation under section 183(e) of the CAA. As previously discussed, the EPA estimates that the wood furniture CTG will reduce VOC emissions from wood furniture manufacturing facilities located in ozone nonattainment areas by 18,500 Mg/yr (20,400 tpy). Of all the wood furniture facilities located in nonattainment areas, there are approximately 950 facilities, emitting on average 25 or more tons of VOC per year, which would be affected by the CTG. Alternatively, a national regulation would limit the VOC content of coatings available to all wood furniture manufacturing facilities, including those emitting less than 25 tpy VOC. Although a national regulation would affect the coatings supplied to approximately 4,500 facilities located

in ozone nonattainment areas, most of these facilities are very small and do not use significant quantities of finishing coatings materials. Based on the estimated BAC limits and number of affected facilities, the EPA estimates that the implementation of a national regulation would reduce VOC emissions from wood furniture manufacturing facilities located in ozone nonattainment areas by 14,234 Mg/yr (15,689 tpy).

Although fewer facilities will be impacted by the CTG than by a national regulation, the EPA estimates that the reductions per facility, and, therefore, overall emission reductions, are greater with the CTG than they are with a national regulation due to a variety of factors. One factor, as discussed previously, is that the CTG includes work practice standards which result in emission reductions that are not obtainable with a national regulation. Another factor is that in estimating the emission reductions from a national regulation, the EPA assumed that all facilities would use topcoats and sealers with the estimated BAC limits of 1.8 kg VOC/kg solids and 3.9 kg VOC/kg solids, respectively. As discussed previously, the BAC limits represent the lowest VOC limits that would be enforceable in a national regulation for all of the coating technologies used in wood furniture manufacturing. Arguably, the estimated BAC limits could be subcategorized, as in the CTG,

to specify particular coating limits for the coatings supplied within the distinct coating technologies. However, the EPA believes that this approach would not lead to further VOC reductions from wood furniture coatings since, as previously discussed, the supplied coatings are often altered prior to use. However, individual facilities that can use waterborne technology will, in practice, use waterborne topcoats below the BAC limits for all coating technology topcoats. Likewise, facilities that can use high solids technology will use high solid sealers below the BAC limit for all coating technology sealers. Since the CTG RACT limits can be enforced at individual facilities, emission reductions from the CTG could account for the lowest limits in each distinct coating technology used by specific sectors of the industry.

This demonstrates the advantage of controlling emissions from the coatings as applied with a CTG, versus the coating as supplied by the manufacturer with a national BAC regulation. As discussed previously, the estimated BAC limits are applicable to all the various topcoat and sealer coating technologies supplied to the industry and, therefore, reflect the lowest VOC limits achievable by all the coating technologies. The CTG, however, can establish coating limits for particular application processes that can use a single coating technology and still produce quality

products. Since the limits in a CTG are applicable to the coatings as applied, and regulators can inspect wood furniture manufacturing facilities for compliance, the EPA believes that a CTG is the most effective way to control emissions from the wood furniture coatings. Therefore, based on the emission reduction estimates, and the limited applicability of a national BAC regulation versus a CTG, the EPA believes that a CTG will be more effective in reducing VOC emissions from wood furniture manufacturing coatings in ozone nonattainment areas, and that a CTG may be issued in lieu of a national regulation under section 183(e)(3)(C).

III. Aerospace Coatings

A. Factors to Consider Regarding the Effectiveness of CTG Compared to National Regulation

In evaluating control strategies for VOC emissions from aerospace coatings, the EPA identified how these coatings are used by the aerospace industry and sources of significant VOC emissions. The aerospace industry includes all manufacturing facilities that produce aerospace vehicles and/or components thereof and all facilities that rework or repair aerospace vehicles. Aerospace facilities can be divided into four market segments: commercial original equipment manufacturers (OEM), commercial rework facilities, military OEM, and military rework facilities. The commercial OEM segment of the market includes the

manufacture of commercial aircraft as well as the production of business and private aircraft. The military OEM segment of the market includes military installations and defense contractors that manufacture aircraft, missiles, rockets, satellites, and spacecraft. Rework facilities, both commercial and military, may rework many of the above end-products. The most significant VOC emissions from the aerospace manufacturing and rework operations are the coatings themselves as well as cleaning operations.

Most aerospace coatings are solvent-borne; the most common VOC solvents are toluene, xylene, methyl ethyl ketone, and methyl isobutyl ketone. The VOC content varies for the various coating categories and specific coating requirements. Coatings are applied to the surface of a part to form a decorative or functional solid film. The most widely used coatings fit into the broad categories of nonspecialized primers and topcoats. However, in addition to these two general categories, there are numerous specialty coatings that provide additional performance characteristics such as temperature, fluid, or fire resistance; flexibility; substrate compatibility; antireflection; temporary protection or marking; sealing; adhesively joining substrates; enhanced corrosion protection; or compatibility with a space environment. Each coating is unique due to individual performance standards

particular to a specific design. The quality of the coatings is critical to the airworthiness and safety of the final product. Therefore, aerospace coating specifications are dictated by the Federal Aviation Administration, the Department of Defense, and specific customer requirements.

A wide variety of solvents, including some of those listed above, are also used for cleaning operations in the aerospace industry. Aerospace components are cleaned frequently during manufacturing to remove contaminants such as dirt, grease, and oil, and to prepare the components for the next operation. Application equipment and work spaces are also cleaned with solvents resulting in potentially significant emissions.

The related VOC emissions from the aerospace industry are, therefore, from the use of the coatings and from the use of solvent in cleaning operations. Because VOC emissions in this industry are due to a variety of different sources in the manufacturing process, including the coatings as applied, a national regulation may be of limited effectiveness in reducing VOC emissions from aerospace coatings. This is primarily due to the limit of the EPA's authority under section 183(e), as previously discussed, to regulate only the aerospace coatings as supplied to the industry. Since, in practice, the supplied aerospace coatings are often altered prior to application by adding

VOC solvents, the "as-applied" VOC content of the coating ends up being greater than the "as-supplied" VOC content. For this reason, a CTG could be as effective, if not more effective, than a national regulation. For the aerospace industry, consisting of facilities which could be inspected for compliance with State RACT rules, a CTG could provide limits for the coatings as applied and also achieve VOC emission reductions from the implementation of work practice standards for the associated cleaning operations.

B. Overview of Recently Proposed Aerospace CTG and Expected Emissions Reductions

On October 29, 1996 (61 FR 55842), a draft CTG for aerospace manufacturing and rework facilities was issued pursuant to section 183(b)(3) for public review along with a supplemental notice to the national emission standard for hazardous air pollutants (NESHAP). The EPA is not seeking comment on the content or issuance of that draft aerospace CTG with this notice. However, the following discussion refers to that CTG as an estimate of the potential emission reductions obtainable with a CTG for the aerospace industry. This discussion serves as the basis for the determination required under section 183(e) as to whether a CTG would be substantially as effective as a regulation.

The draft aerospace CTG applies to aerospace manufacturing and rework facilities which are considered

major VOC sources located in ozone nonattainment areas that emit more than 25 tpy of VOC (10 tpy for sources located in extreme ozone nonattainment areas). The type and level of VOC control identified in the draft CTG is based on BACM. The draft CTG emission limits were established in conjunction with the development of maximum achievable control technology for the NESHAP. This involved extensive data gathering and evaluation to identify the best controls for the industry in consideration of advanced technology and feasibility. The VOC content limits of 350 grams per liter (g/l) (2.9 pounds per gallon (lb/gal)) (less water and exempt solvents) and 420 g/l (3.5 lb/gal) (less water and exempt solvents) were established for primers and topcoats respectively. The VOC content limits of 622 g/l (5.2 lb/gal) (less water and exempt solvents) and 160 g/l (1.3 lb/gal) (less water and exempt solvents) were established for Type I and Type II chemical milling maskants respectively. Additional VOC limits, as presented in table 3, were established for various specialty coating categories. The draft CTG also includes a requirement that facilities use specific types of application equipment (or techniques) for applying primers and topcoats and follow work practice guidelines for solvent cleaning operations, housekeeping measures, hand-wipe cleaning, flush cleaning, and spray gun cleaning.

The EPA estimates that approximately 64 percent of aerospace facilities, or 1,836 facilities, are located in ozone nonattainment areas and are expected to be subject to the aerospace CTG resulting in VOC emission reductions of 3,889 Mg/yr (4,288 tpy). Of the 3,889 Mg/yr (4,288 tpy), 2,721 Mg/yr (3,000 tpy) are expected to result from the VOC content limits of the applied coatings with the remaining reductions from the equipment and work practice standards.

As mentioned earlier, a CTG issued pursuant to section 183(e) would be based on RACT. The EPA believes that for aerospace coatings, RACT and BACM are identical. While typically BACM ("best") implies more stringent control than RACT ("reasonable"), the EPA recognizes that there may be instances when there is such a limited range of controls for a specified industry or industry process that these two levels of control may be identical. The aerospace coating industry is such an instance. Thus, the EPA believes that it is appropriate to rely on these estimated emission reductions, which reflect both BACM and RACT, for the purpose of comparing the effectiveness of a CTG to a regulation under section 183(e).

C. Estimate of BAC for Aerospace Coatings

As discussed previously, the EPA must determine whether a CTG would be substantially as effective as a regulation based on BAC. In making this determination, the EPA has prepared a likely estimate of the emission reductions that could be achieved with a BAC-based regulation. Although the EPA prepared such an estimate, it is important to note that this is only an estimate of what emission reductions might be achieved with a BAC-based regulation. If the EPA were to proceed with the development of a national BAC regulation, it is possible that the level of VOC reductions resulting from a BAC-based regulation may differ from the estimates calculated today.

In estimating BAC for aerospace coatings, the EPA evaluated the data and information used to establish the VOC emission controls in the aerospace CTG issued pursuant to section 183(b) which is based on BACM. Although section 183(b) does not specifically define BACM, the VOC limits established under this section for primers and topcoats represent the best performing sources in the industry. Because there is no distinct definition of BACM, the EPA believes that limits based on BACM are similar, if not equivalent, to limits that would be established under BAC as required in section 183(e). Thus, the EPA believes it is reasonable to rely on the limits established under BACM as representative of BAC limits for the purpose of

comparing the effectiveness of an aerospace CTG to a national regulation in reducing VOC emissions in ozone nonattainment areas. In this notice, the EPA is not proposing these limits as BAC for the purpose of issuing a national regulation. Rather, the EPA is using these estimated limits to compare the effectiveness of an aerospace CTG to a national regulation aimed at reducing VOC emissions in nonattainment areas for the purpose of determining whether a CTG for this category is substantially as effective as a regulation.

D. Comparison of Effectiveness of Aerospace CTG with National Regulation Based on BAC in Reducing VOC Emissions

As discussed previously, the EPA estimated that the aerospace CTG will reduce VOC emissions from aerospace manufacturing and rework facilities located in ozone nonattainment areas by 3,889 Mg/yr (4,288 tpy). Alternatively, the EPA estimates that the implementation of a national regulation, based on the likely BAC limits and the number of affected facilities, would reduce VOC emissions from aerospace manufacturing and rework facilities located in ozone nonattainment areas by 2,721 Mg/yr (3,000 tpy). The number of facilities in ozone nonattainment areas affected by a national regulation is equal to the number of facilities affected by a CTG. However, the emission reductions from a CTG are greater due

to the inclusion of equipment and work practice standards related to the coating operations, which a regulation under section 183(e) would not include.

In addition, the EPA believes that a CTG would be more effective because it is applicable to aerospace coatings as applied, whereas a national regulation is limited to coatings as supplied. The EPA believes that for aerospace coatings, supplied coatings are often altered by thinning prior to use. Because the EPA does not have authority under section 183(e) to regulate end-users, a national regulation would not be able to prohibit such activities and the actual emission reductions from a regulation may be considerably less if data were available to adjust for thinning emissions. For the foregoing reasons, the EPA believes that a CTG would be more effective in reducing VOC emissions from aerospace coatings in ozone nonattainment areas, and that a CTG may be issued in lieu of a national regulation under section 183(e)(3)(C).

IV. Shipbuilding and Ship Repair Coatings

A. Factors to Consider Regarding the Effectiveness of CTG Compared to a National Regulation

In evaluating control strategies for VOC emissions from shipbuilding and ship repair coatings, the EPA identified the coatings used by the shipbuilding and ship repair industry and the significant sources of VOC emissions

in that industry. The shipbuilding and ship repair industry consists of establishments that build and repair ships, and includes operations such as repainting, conversions, and alterations of ships.

Marine coatings are vital for protecting the ship from corrosive and biotic attacks from the ship's environment. A typical coating system consists of (1) a thin primer coat that provides initial corrosion (oxidation) protection and promotes adhesion of the subsequent coating, (2) one or more intermediate coats that physically protect(s) the primer and may provide additional or special properties, and (3) a topcoat that provides long-term protection for both the substrate and the underlying coatings.

Marine coatings are very complex and serve specific functions such as corrosion protection, heat/fire resistance, and antifouling (used to prevent the settlement and growth of marine organisms on the ship's underwater hull). Specific coating selections are based on the intended use of the ship, ship activity, travel routes, desired time between paintings (service life), the aesthetic desires of the ship owner or commanding officer, and fuel costs. Different coatings are used for these purposes, and each may use one or more solvents (or solvent blends) in different concentrations. Ship owners and paint formulators

specify the paints and coating thicknesses to be applied at shipyards.

Solvents are frequently added to coatings by the applicator just prior to application to adjust viscosity. Thinning of coatings is done at most shipyards (regardless of size) even though the paint manufacturers typically state it is usually unnecessary. Weather conditions play a big part in thinning, as do application processes and desired drying times. Solvents are also widely used for equipment cleaning which results in significant VOC emissions. Because VOC emissions in this industry are due to a variety of different sources in the manufacturing process, including the coatings as applied, a national regulation may be of limited effectiveness in reducing VOC emissions from shipbuilding and ship repair coatings. This is primarily due to the limit of the EPA's authority under section 183(e), as previously discussed, to regulate only the shipbuilding and ship repair coatings as supplied to the industry. Because, in practice, the supplied coatings are often thinned prior to application by adding VOC solvents, the "as-applied" VOC content of the coating ends up being greater than the "as-supplied" VOC content. For this reason a CTG could be as effective, if not more effective, than a national regulation. For the shipbuilding and ship repair industry, consisting of facilities which could be inspected

for compliance with State RACT rules, a CTG could provide limits for the coatings as applied and also achieve VOC emission reductions from the implementation of work practice standards for the associated cleaning operations.

B. Overview of Shipbuilding and Ship Repair CTG and Expected Emissions Reductions

Under a separate Federal Register notice, the EPA recently released a final CTG for shipbuilding and ship repair operations (surface coating) (61 FR 44050, August 27, 1996) pursuant to section 183(b)(4) of the CAA. The EPA is not seeking comment on the content, or issuance, of that shipbuilding and ship repair CTG as it was issued independently of any requirements of section 183(e). However, for the purpose of determining whether a CTG would be substantially as effective as a rulemaking as required under section 183(e), the following discussion refers to that CTG as an estimate of the potential emission reductions obtainable with a CTG for the shipbuilding and ship repair industry.

The shipbuilding and ship repair CTG applies to shipbuilding and ship repair facilities (i.e., shipyards) which are, or have the potential to become, major VOC sources in ozone nonattainment areas. The CTG for shipbuilding and repair operations (surface coating) was developed in parallel with the NESHAP for this same

industry. In establishing the level of control for surface coating operations in the shipbuilding and ship repair industry, the EPA relied on BACM as proposed in the Federal Register on December 6, 1994 (59 FR 62681). The type and level of VOC control identified as BACM is based on the marine coating VOC limits being used in California (with some exceptions and modifications). Table 4 presents the various coating categories with the maximum "as-applied" VOC content allowed for each. The CTG also includes additional work practice guidelines that apply to solvent cleaning operations and housekeeping measures. The EPA estimates that approximately 100 shipyards will be subject to State regulations based on the CTG. The emission limits and work practice standards are expected to reduce VOC emissions from these shipyards by 1,239 Mg/yr (1,366 tpy). As mentioned earlier, a CTG issued pursuant to section 183(e) would be based on RACT. The EPA believes that for shipbuilding and ship repair coatings RACT and BACM are identical. While typically BACM ("best") implies more stringent control than RACT ("reasonable"), the shipbuilding industry, as in the case of the aerospace industry, presents such a limited range of controls for a specified industry process that these two levels of control may be identical. Thus, the EPA believes that it is appropriate to rely on these already existing estimated emission reductions, which reflect both

BACM and RACT, for the purpose of comparing the effectiveness of a CTG to a regulation under section 183(e).

C. Estimate of BAC for Shipbuilding and Ship Repair Coatings

As discussed previously, the EPA must determine whether a CTG would be substantially as effective as a regulation based on BAC. In making this determination, the EPA has prepared a likely estimate of the emission reductions that could be achieved with a BAC-based regulation. Although the EPA prepared such an estimate, it is important to note that this is only an estimate of what emission reductions might be achieved with a BAC-based regulation. If the EPA were to proceed with the development of a national BAC regulation, it is possible that the BAC-based regulation may differ from the estimates calculated today.

The EPA believes the use of lower-VOC coatings is the only technologically and economically feasible level of control for shipbuilding and ship repair coatings that the EPA can establish on a category-wide basis. In estimating BAC for shipbuilding and ship repair coatings, the EPA evaluated the work completed to establish the emission controls in the shipbuilding and ship repair CTG issued pursuant to section 183(b) which is based on BACM. Although section 183(b) does not specifically define BACM, the VOC

limits for shipbuilding and ship repair coatings established in the CTG and presented in table 4 represent the best performing sources in the industry. Because there is no distinct definition, the EPA believes that limits based on BACM are similar, if not equivalent, to limits that would be established under BAC as required in section 183(e). Thus, the EPA believes it is reasonable to rely on the limits established under BACM as representative of BAC limits for the purpose of comparing the effectiveness of a shipbuilding and ship repair CTG to a national regulation in reducing VOC emissions in ozone nonattainment areas. In this notice, the EPA is not proposing these limits as BAC for the purpose of issuing a national regulation.

D. Comparison of Effectiveness of Shipbuilding and Ship Repair CTG with National Regulation Based on BAC in Reducing VOC Emissions

Based on the CTG issued pursuant to section 183(b), the EPA estimated that the shipbuilding and ship repair CTG will reduce VOC emissions from shipyards located in ozone nonattainment areas by 1,239 Mg/yr (1,366 tpy). Of the approximately 187 shipyards located in ozone nonattainment areas, there are approximately 100 facilities which emit 25 tpy or more of VOC (10 tpy for facilities in extreme nonattainment areas) and will, therefore, be subject to State regulations based on the CTG. Alternatively, a

national regulation would limit the VOC content of coatings available to all 187 shipyards located in ozone nonattainment areas. However, most of these facilities are very small, such as barge yards with less than 15 employees, and do not use significant quantities of marine coatings which result in significant VOC emissions. The EPA estimates that the implementation of a national regulation, based on the estimated BAC limits and the estimated number of affected facilities, would reduce VOC emissions from shipyards located in ozone nonattainment areas by 1,605 Mg/yr (1,770 tpy).

Although the estimated emission reductions from a national regulation (1,605 Mg/yr (1,770 tpy)) are greater than the estimated emission reductions from a CTG (1,239 Mg/yr (1,366 tpy)), the EPA believes that a CTG would be more effective because it is applicable to shipbuilding and ship repair coatings as applied, whereas a national regulation is limited to coatings as supplied. The EPA believes that many shipyard coaters routinely add thinning solvent to coatings prior to application, increasing the VOC content of the coatings as applied. Because the EPA does not have authority under section 183(e) to regulate end-users, a national regulation would not be able to prohibit such activities and the actual emission reductions estimates from a regulation may be considerably less if data were

available to adjust for thinning emissions. A CTG could effectively limit emissions from "as-applied" coatings which take into account any thinning solvents added to the supplied coating prior to application. For the foregoing reasons, the EPA believes that a CTG would be substantially as effective in reducing VOC emissions from shipbuilding and ship repair coatings in ozone nonattainment areas, and that a CTG may be issued in lieu of a national regulation under section 183(e)(3)(C).

V. Proposed Determination

Based on the above analyses, the EPA has determined that the recently finalized wood furniture CTG and the draft aerospace CTG being developed will reduce VOC emissions in ozone nonattainment areas by 18,500 Mg/yr (20,400 tpy) and 3,889 Mg/yr (4,288 tpy), respectively. These estimated reductions from the CTG are greater than the estimated reductions in ozone nonattainment areas from a national regulation for wood furniture coatings and aerospace coatings, 14,234 Mg/yr (15,689 tpy) and 2,721 Mg/yr (3,000 tpy), respectively. Because the CTG for the wood furniture and aerospace industries are likely to be more effective in reducing VOC emissions than national regulations developed under section 183(e), the EPA has determined that a CTG is substantially as effective as a national regulation in reducing VOC emissions and,

therefore, may issue CTG in lieu of national regulations for wood furniture and aerospace coatings under section 183(e).

In the case of shipbuilding and ship repair coatings, the EPA believes that the emission reductions obtainable through a CTG, recommending limits on "as-applied" coatings, would be as much as reductions achieved by a national regulation setting limits for "as-supplied" coatings. Therefore, the EPA has determined that a CTG is substantially as effective as a national regulation and may issue a CTG in lieu of a national regulation for shipbuilding and ship repair coatings under section 183(e).

VI. Cost-Effectiveness

The following information may be of interest to readers of today's notice, and is presented here solely for informational purposes. The cost-effectiveness estimates for the wood furniture, aerospace, and shipbuilding and ship repair CTG were calculated under separate actions during the development of the CTG. The previously issued wood furniture CTG has a cost-effectiveness of \$1089/Mg. The cost-effectiveness of the aerospace and shipbuilding and ship repair CTG cannot be precisely calculated because of the interrelationship of costs and emission reductions with the concomitant NESHAP for these standards. The final shipbuilding and ship repair CTG estimated a cost effectiveness of \$846/Mg; and the draft aerospace CTG did

not quantify the additional costs resulting from the CTG, but concluded that they are negligible.

VII. Solicitation of Comments

The Administrator welcomes comments from interested persons on the proposed determination that RACT-based CTG would be substantially as effective as BAC-based national regulations for the wood furniture manufacturing, aerospace, and shipbuilding and ship repair (coatings) industries. The Administrator is specifically requesting factual information that may support either the approach taken or an alternative approach. To receive proper consideration, documentation or data should be provided to support the comments.

VIII. Administrative Requirements

A. Public Hearing

A public hearing will be held, if requested, to provide opportunity for interested persons to make oral presentations regarding the proposed determinations in accordance with section 307(d)(5) of the CAA. Persons wishing to make an oral presentation on the EPA's proposed determinations that CTG's may be issued in lieu of regulations for wood furniture, aerospace, and shipbuilding and ship repair coatings should contact the EPA at the address given in the ADDRESSES section of this preamble. Oral presentations will be limited to 15 minutes each. Any member of the public may file a written statement before,

during, or within 30 days after the hearing. Written statements should be addressed to the Air and Radiation Docket address given in the ADDRESSES section of this preamble, and should refer to Docket No. A-96-23.

A verbatim transcript of the hearing and any written statements will be available for public inspection and copying during normal working hours at the EPA's Air and Radiation Docket in Washington, DC (see ADDRESSES section of this preamble).

B. Docket

The docket is an organized and complete file of all the information submitted to or otherwise considered by the EPA in the development of this proposed determination. The principal purposes of the docket are: (1) to allow interested parties to readily identify and locate documents so that they can intelligently and effectively participate in the decision making process, and (2) to serve as the record in case of judicial review (section 307(d)(7)(A) of the CAA).

C. Paperwork Reduction Act

This action does not impose an information collection burden under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501, et seq.

D. Administrative Designation and Regulatory Analysis

Under Executive Order 12866 (58 FR 51735, October 4, 1993), the EPA must determine whether the regulatory action is "significant" and therefore subject to Office of Management and Budget (OMB) review and the requirements of the Executive Order. The Order defines "significant regulatory action" as one that is likely to result in a regulation that may:

(1) Have an annual effect on the economy of \$100 million or more, or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities.

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency.

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs, or the rights and obligations of recipients thereof.

(4) Raise novel legal or policy issues arising out of legal mandates, the Presidents's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of the Executive Order, OMB has notified the EPA that it considers this a "significant regulatory action" within the meaning of the executive order. The EPA has submitted this action to OMB for review.

Changes made in response to OMB suggestions or recommendations are documented in the docket (see ADDRESSES).

E. Regulatory Flexibility

Because today's notice is not a rulemaking, the EPA has not prepared a regulatory flexibility analysis pursuant to the Regulatory Flexibility Act (Public Law 96-354, September 19, 1980).

F. Unfunded Mandates Act

Because today's notice is not a rulemaking, the requirements of the Unfunded Mandates Reform Act of 1995 (Public Law 104-4) do not apply to this action.

TABLE 1. CTG EMISSION LIMITS

Reference control technology	Emission limit, kg VOC/kg solids
Waterborne	
- Topcoats	0.8
- Sealer	No limit
High solids	
- Sealer	1.9
- Topcoat	1.8
- Vinyl sealers	2.3
- Conversion varnish topcoats	2.0

TABLE 2. CTG WORK PRACTICE STANDARDS

Emission source	Work practice
Finishing operations	
Transfer equipment leaks	Develop written inspection and maintenance plan to address and prevent leaks. Minimum inspection frequency of 1/month.
Storage containers, including mixing equipment	Keep covered when not in use
Application equipment	Discontinue use of conventional air spray guns ^a
Cleaning Operations	
Gun/line cleaning	Collect cleaning solvent into a closed container; cover all containers when not in use
Spray booth cleaning	Limit use of organic solvents
Washoff/general cleaning	Keep washoff tank covered when not in use; Minimize dripping by tilting and/or rotating the part to drain as much solvent as possible and allowing sufficient dry time; Maintain a log of the quantity and type of solvent used for washoff and cleaning; Maintain a log of the number of pieces washed off and the reason for the washoff
Miscellaneous	
Operator training	Train all operators in proper application, cleanup, and equipment use.
Implementation plan	Develop a plan to implement work practice standards and maintain onsite

^aAir guns will be allowed only in the following instances:

- When they are used in conjunction with coatings that emit less than 1.0 kg VOC per kg of solids used;
- Touch up and repair under limited conditions;

TABLE 3. AEROSPACE SPECIALTY COATINGS VOC
CONTENT LIMITS (g/l) *

Coating type	Limit	Coating type	Limit
Ablative Coating	600	Flight-Test Coating	
Adhesion Promoter	890	Missile or Single Use Aircraft	420
Adhesive Bonding Primer		All Other	840
Cured at 250°F or below	850	Fuel-Tank Coating	720
Cured above 250°F	1030	High-Temperature Coating	850
Adhesives		Insulation Covering	740
Commercial Interior Adhesive	760	Intermediate Release Coating	750
Cyanoacrylate Adhesive	1,020	Lacquer	830
Fuel Tank Adhesive	620	Maskants	
Nonstructural Adhesive	360	Bonding Maskant	1,230
Rocket Motor Bonding Adhesive	890	Critical Use and Line Sealer Maskant	1,020
Rubber-based Adhesive	850	Seal Coat Maskant	1,230
Structural Autoclavable Adhesive	60	Metallized Epoxy Coating	740
Structural Nonautoclavable Adhesive	850	Mold Release	780
Antichafe Coating	660	Optical Anti-Reflective Coating	750
Chemical Agent-Resistant Coating	550	Part Marking Coating	850
Clear Coating	720	Pretreatment Coating	780
Commercial Exterior Aerodynamic		Rain Erosion-Resistant Coating	850
Structure Primer	650	Rocket Motor Nozzle Coating	660
Compatible Substrate Primer	780	Scale Inhibitor	880
Corrosion Prevention Compound	710	Screen Print Ink	840
Cryogenic Flexible Primer	645	Sealant	
Cryoprotective Coating	600	Extrudable/Rollable/Brushable Sealants	240
Electric or Radiation-Effect Coating	800	Sprayable Sealants	600
Electrostatic Discharge and Electromagnetic		Self-priming Topcoat	420
Interference (EMI) Coating	800	Silicone Insulation Material	850
Elevated Temperature Skydrol Resistant		Solid Film Lubricant	880
Commercial Primer	740	Specialized Function Coating	890
Epoxy Polyamide Topcoat	660	Temporary Protective Coating	320
Fire-Resistant (interior) Coating	800	Thermal Control Coating	800
Flexible Primer	640	Wet Fastener Installation Coating	675
		Wing Coating	850

*Grams per liter VOC (g/l) means a weight of VOC per combined volume of VOC and coating solids, less water and exempt compounds.

TABLE 4. VOC LIMITS FOR MARINE COATINGS

Coating category	VOC limits ^{a,b}		
	grams/liter coating (minus water and exempt compounds)	grams/liter solids ^c	
		t ≥ 4.5°C	t < 4.5°C ^d
General use	340	571	728
Specialty	--	--	--
Air flask	340	571	728
Antenna	530	1,439	--
Antifoulant	400	765	971
Heat resistant	420	841	1,069
High-gloss	420	841	1,069
High-temperature	500	1,237	1,597
Inorganic zinc high-build	340	571	728
Military exterior	340	571	728
Mist	610	2,235	--
Navigational aids	550	1,597	--
Nonskid	340	571	728
Nuclear	420	841	1,069
Organic zinc	360	630	802
Pretreatment wash primer	780	11,095	--
Repair and maint. of thermoplastics	550	1,597	--
Rubber camouflage	340	571	728
Sealant for thermal spray aluminum	610	2,235	--
Special marking	490	1,178	--
Specialty interior	340	571	728
Tack coat	610	2,235	--
Undersea weapons systems	340	571	728
Weld-through precon. primer	650	2,885	--

^aThe limits are expressed in two sets of equivalent units. Either set of limits may be used to demonstrate compliance.

^bTo convert from g/l to lb/gal, multiply by (3.785 l/gal)(1/453.6 lb/g) or 1/120. For compliance purposes, metric units define the standards.

^cVOC limits expressed in units of mass of VOC per volume of solids were derived from the VOC limits expressed in units of mass of VOC per volume of coating assuming the coatings contain no water or exempt compounds and that the volumes of all components within a coating are additive.

^dThese limits apply during cold-weather time periods (i.e., temperatures below 4.5°C). Cold-weather allowances are not given to coatings in categories that permit less than 40 percent solids (nonvolatiles) content by volume. Such coatings are subject to the same limits regardless of weather conditions.

